AMENDMENTS TO THE CLAIMS

Claims 1-30 (Canceled)

31. (Previously Presented) Method for determining haemodynamic indices of an organ or of a part of tissue of a mammal including

a) determining a time series of tomographic data pertaining to the organ or part of tissue during and after a bolus injection of a tracer dose to said mammal, the tracer being substantially intravascular in said tissue,

b) determining a time series of concentration data being indicative of the concentration of the tracer in arteries of the organ or tissue from the time series of tomographic data,

c) determining a residue function of the organ or of the part of tissue by deconvolution of the time series of tomographic data with the time series of concentration data,

d) determining a distribution of transit times from the negative slope of the residue function, and

e) determining a probability density function (PDF) of a haemodynamic index from the distribution of transit times.

32. (Previously Presented) Method according to claim 31, wherein a probability density function (PDF) of a normalised haemodynamic index is determined from the distribution of transit times, the index being normalised by the value of the integral of said index.

33. (Previously Presented) Method according to claim 31, wherein at least one of the haemodynamic indices is a quantitative haemodynamic parameter obtained from the PDF.

34. (Previously Presented) Method according to claim 33, wherein at least one of the at least one parameter is obtain from comparison of the determined PDF and a previously determined reference PDF.

35. (Previously Presented) Method according to claim 34, wherein the parameter is obtained by use of the Kolmogorov Smirnov test.

36. (Previously Presented) Method according to claim 33 and comprising the steps of

determining the impulse response function of the organ or of the part of tissue by deconvolution of the time series of tomographic data with the time series of concentration data,

determining the relative tissue flow from the impulse response function of the organ or of the part of tissue,

normalising said time series of concentration data with the integral of said time series of concentration data with respect to time,

determining the normalised relative tissue flow, respectively the normalised blood volume, of the organ or part of tissue by use of the relative tissue flow and the time series of normalised concentration data, and

converting said normalised relative tissue flow, respectively normalised blood volume, to an absolute value for the tissue flow (F_t), respectively the blood volume, by means of a previously determined conversion factor,

the quantitative haemodynamic parameter being of metabolic significance and determined from the PDF and the absolute tissue flow (F_t), respectively the absolute blood volume.

37. (Previously Presented) Method according to claim 36, wherein a parameter (E) significant for the local extraction of a substance is determined, the method further comprising the following steps:

calculating the relative flow heterogeneity (w(f)) as a function of the relative flow (f) from the distribution of transit times,

estimating a value (P) for the local capillary permeability,

estimating a value (S) for the local capillary surface area,

calculating said parameter (E) as the integral value of the relative flow heterogeneity (w(f)) multiplied by one minus the natural exponential function of the negative ratio between

i) the product of the local capillary permeability (P) and the local capillary surface area (S), and

ii) the product of the relative flow (f) and the absolute tissue flow (F_t)

with respect to the relative flow (f).

38. (Previously Presented) Method according to claim 36, wherein the normalised relative tissue flow, respectively the blood volume, is also normalised with the injected tracer dose being the ratio between tracer amount and body weight of the individual mammal.

39. (Previously Presented) Method according to claim 36, wherein the previously determined conversion factor is in general applicable for the present method to members of a mammalian specie.

40. (Previously Presented) Method according to claim 36, wherein the previously determined conversion factor is in general applicable for the present method to an organ or tissue of the mammalian specie.

41. (Previously Presented) Method according to claim 36, wherein the previously determined conversion factor is a constant factor applicable for the present method for any organ or any part of tissue of the mammalian specie.

42. (Previously Presented) Method according to claim 36, wherein the previously determined conversion factor is a constant factor applicable for all of cerebral tissue of the mammalian specie.

43. (Previously Presented) Method according to claim 31, wherein the tomographic data are obtained by means of magnetic resonance imaging.

44. (Previously Presented) Method according to claim 31, wherein the tissue is cerebral tissue.

45. (Previously Presented) Method according to claim 31, wherein the tissue is renal tissue.

46. (Previously Presented) Method according to claim 45, wherein the tissue is renal parenchyma tissue.

47. (Previously Presented) Method according to claim 31, wherein the tissue includes tumour tissue.

48. (Previously Presented) Method according to claim 31, wherein the tracer is a Gd-chelate, such as Gd-DTPA.

49. (Previously Presented) Method according to claim 31, wherein the tracer is an ultra small iron oxide particle (USPIO) intravascular contrast agent.

50. (Previously Presented) Method according to claim 44, wherein the tomographic data are obtained by means of susceptibility contrast magnetic resonance imaging.

51. (Previously Presented) Method according to claim 31, wherein the tomographic data comprise information pertaining to subregions of sections of the organ or part of tissue and the haemodynamic indices are determined for at least a substantial part of said subregions.

52. (Previously Presented) Method according to claim 33, wherein the tomographic data comprise information pertaining to subregions of sections of the organ or part of tissue and the haemodynamic indices are determined for at least a substantial part of said subregions, and wherein quantitative haemodynamic parameters are represented as images subdivided into a plurality of pixels each representing a quantitative haemodynamic parameter pertaining to one of said subregions.

53. (Currently Amended) Method according to claim 31, further comprising using ~~A~~ a system for processing of the time series of tomographic data pertaining to ~~an~~ the organ or ~~a~~ the part of tissue ~~according to claim 31~~, said system residing on a computer having means for producing an output representative of at least some of the determined haemodynamic indices.

54. (Previously Presented) Method for evaluating the efficacy of a drug or a substance on an organ or on a part of tissue of a mammal by means of haemodynamic indices of said organ or of said part of tissue obtained by a method according to claim 31.

55. (Currently Amended) Method according to claim 54, further comprising using ~~A~~ a system for processing of the time series of tomographic data pertaining to ~~an~~ the organ or ~~a~~ the part of a tissue ~~according to claim 54~~, said system residing on a computer having means for producing an output representative of at least some of the determined haemodynamic indices.

56. (Previously Presented) Method for obtaining information of the likelihood of recovery of an organ or part of tissue in a living mammal upon or during a period of insufficient vascular supply of said organ or of said part of tissue in the mammal comprising determining haemodynamic indices according to claim 31.

57. (Previously Presented) Method for obtaining information of the likelihood of progression of a chronic or neoplastic disease process of an organ or part of tissue in a living mammal affecting said organ or said part of tissue in the mammal comprising determining haemodynamic indices according to claim 31.

58. (Previously Presented) Method for obtaining information relevant for discrimination between relevant therapy of an organ or part of tissue in a living mammal upon or a period of insufficient vascular supply of said organ or of said part of tissue in the mammal comprising determining haemodynamic indices according to claim 31.

59. (Previously Presented) Method for obtaining information relevant for discriminating between relevant therapy of an organ or part of tissue in a living mammal upon the discovery of a chronic or neoplastic disease of said organ or of said part of tissue in the mammal comprising determining haemodynamic indices according to claim 31.

60. (Previously Presented) Use of information obtained by use of the method according to claim 31 for preparing a reference table for use in discrimination of a treatment schedule for

an individual mammal or group of mammals for which information have been obtained in a manner similar to said information.

61. (Previously Presented) Use of information obtained by use of the method according to claim 54 for preparing a reference table for use in discrimination of a treatment schedule for an individual mammal or group of mammals for which information have been obtained in a manner similar to said information.